

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 5, line 2, under the heading "Summary of the invention" as follows:

The present invention is based on the magnetic levitation of ~~a~~an inertial mass to create highly sensitive non-contact inertial sensing systems. It relates to an inertial sensor ~~as defined in claim 1~~based on the magnetic levitation of a ferromagnetic spherical or cylindrical inertial mass and comprising:

- Six electromagnets diametrically disposed in pairs along three orthogonal axis, said pairs of electromagnets constituting means for levitation and differential actuation of said inertial mass
- Six position sensors diametrically disposed in pairs along three orthogonal axis, said pairs of position sensors constituting means for differential measurements of the position of said inertial mass

wherein said pair of electromagnets, together with said pairs of position sensors and said inertial mass, constitute an active magnetic bearing which give the means for:

- controlling the position of said inertial mass along three independent axis
- creating, for any of said independent axis, restoring forces that can be oriented in any of the two directions of said independent axis

wherein said active magnetic bearing is enclosed in an outer frame made of homogeneous ferromagnetic material; said outer frame constituting a magnetic shielding of said inertial sensor,

wherein said outer frame of said inertial sensor is hermetically sealed in order to offer the possibility of creating and keeping vacuum inside said outer frame, wherein a lock-in amplifier is

used for the signal conditioning of said position sensors. There are various preferred
embodiments defined in the dependent claims. The following detailed description will better
show all the advantages provided by the invention over the prior art sensors.